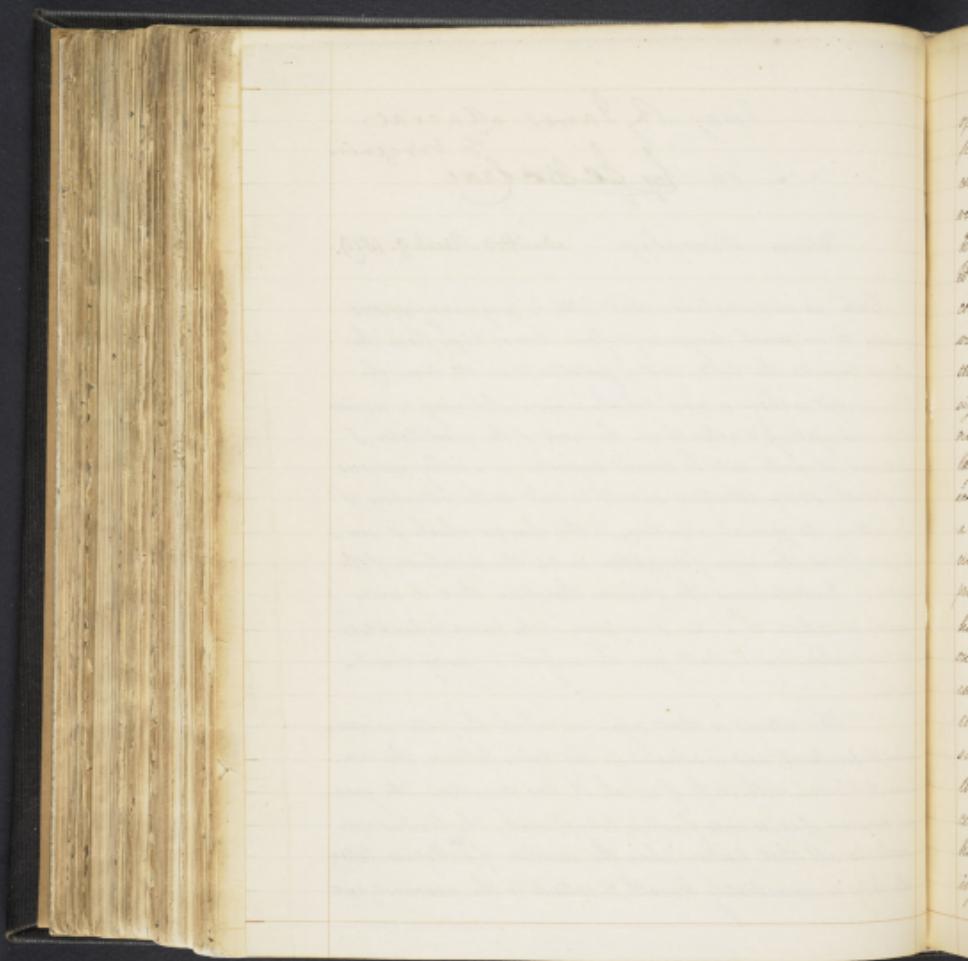


Epay By James Macrae  
of Virginia  
on. by Dr Macrae.

Uterine Hemorrhage. admitted March 9. 1819.

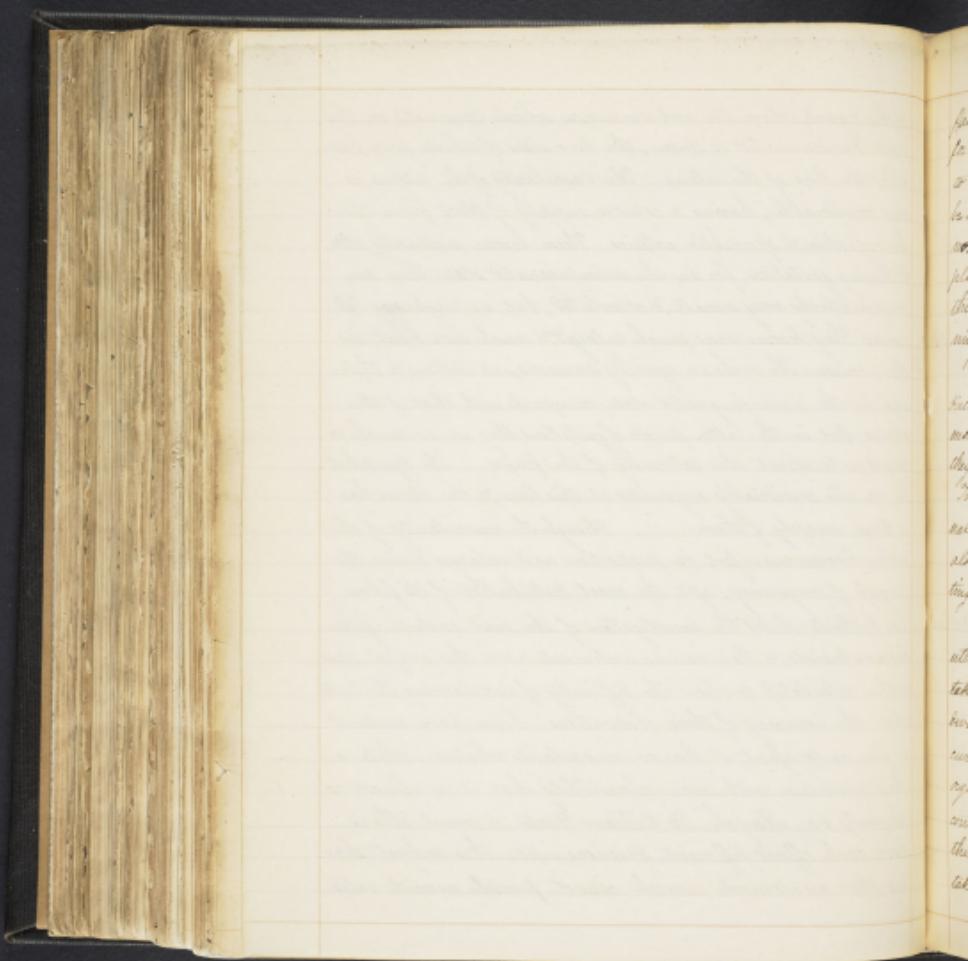
Since no circumstance that attends pregnancy exposes women to so much danger as profuse hemorrhage from the uterus towards the latter end of gestation, & in the time of labour; and as there is none which is more alarming, or requires more promptness, & activity on the part of the practitioner, I presume it will not be deemed impudent, or wholly unnecessary that some attention should be paid to the situation of the uterus, its general structure, & the changes which it undergoes from the time of conception until the evulsion of the fetus. Entertaining the opinion therefore that it will greatly contribute to a true knowledge of the disease, & facilitate its comprehension I shall give the subject a cursory consideration.

The uterus is that organ in which the fetus is implanted, & developed, and is situated in the pelvis between the rectum, & bladder with both of which it has connections. The general division of it, is into fundus, body, & neck. The fundus comprehends all that portion above the insertion of <sup>the</sup> fallopian tubes, the body is immediately beneath, & extends to the narrowest part



2

of this region, where the neck commences which terminates in the  
part denominated the uterus, the two sides of which have been  
called the lips of the uterus. The circulation of the uterus is  
very considerable, having a copious supply of blood from the  
hypogastric, & ovarian arteries. There becomes materially alter-  
ed during gestation, for in the unengaged state they are  
comparatively very small, & convoluted, but as pregnancy ad-  
vances they become very much enlarged, & much more direct in  
their course. The ovaries are equally numerous, not tortuous, & their  
size in the unengaged state corresponds with that of the  
uterus; but in the latter period of gestation they are so much en-  
larged as to almost the extremity of the finger. The lymphat-  
ics are also considerably augmented at this time, & the uterus has  
a large supply of them. — Through the muscularity of the  
uterus becomes manifest in proportion as it enlarges during the  
process of pregnancy; yet the exact distribution of its fibers  
has hitherto eluded the investigation of the most acute, & apre-  
cious anatomists, & plain serious sentiments upon this subject have  
either calculated to show the difficulty of ascertaining the truth  
than the accuracy of their observations. Some have rendered  
so far as to assert it has no muscularity whatever, while o-  
thers maintain with more plausibility that it is almost ex-  
clusively so. Rayich, Dr. William Hunter, & several others  
have each offered different opinions upon this subject, show-  
ing that anatomical research cannot furnish us with satis-



factors information, & that we must resort to some other means for a more clear comprehension of the difficulty. Now we conceive to be the contraction of the uterus itself, of which more will be said hereafter. - It does however appear from the phenomena of parturition, & the regular changes which take place in the uterus during that period, & even before, that this viscus has at least two sets of muscular fibres running in different directions, viz., the longitudinal, & circular.

The longitudinal are those which run in the propulsive direction of the uterus, & may be supposed to extend in a line more or less straight from the fundus to the neck, consequently they must shorten its length when they contract.

The circular are in some degree analogous of the longitudinal, and run in the direction of the transverse diameter; they also may be considered as commencing at the fundus & terminating at the os uteri.

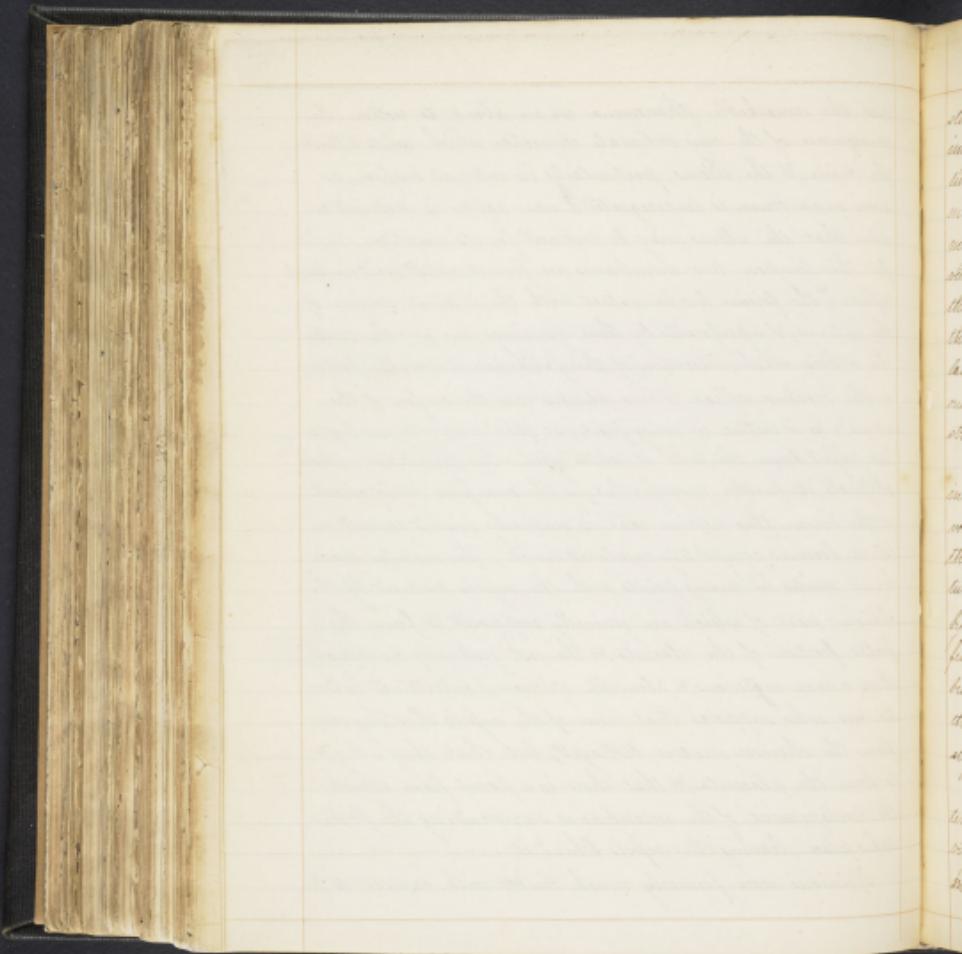
Having noticed thus slightly the structure of the uterus it will be well to consider the various changes which take place in it in consequence of conception, & the gradual development of the foetus. These are as important as they are curious, & interesting; for until the period of invagination this organ seems only to possess that modification of sensibility, and contractility which are necessary for the purposes of nutrition, & the menstrual discharge! - But so soon as conception has taken place, new sympathies are called into action which pro-

*Individually*  
*appressed*

\*or one membrane consisting of two lamina

such the remarkable phenomena we are about to notice. In consequence of the very intimate connection which exists between the ovaries, & the uterus, particularly its internal surface, so soon as an ovum is impregnated a new surface is produced in such a manner that the uterus may be prepared for its reception. To facilitate this function two membranes are formed, called decidua & serosa; the former lies in contact with the internal surface of the uterus, & is perforated by three openings, one at the ovary, the others at the insertion of the fallopian tubes; the latter, or the decidua serosa is also extended over the surface of the uterus, & is entire in every part, so that when the embryo has passed down the tube it meets with this membrane, which constitutes its further progress; but by the successive development of the ovum this uterine coat is gradually pushed forward until it becomes completely enclosed in it. This vascular membrane unites in many points with the vessels produced by the chorion, part of which are specially supposed to form the foetal portion of the placenta, & the rest gradually disappear; but a more ingenious & plausible opinion is entertained by Dr. De la Croix, who supposes that some of the vessels shooting out from the chorion are too destroyed, but that they all go to form the placenta, & that there is a point from which the development of the membranes surrounding the foetus takes place, leaving the vessels behind it. —

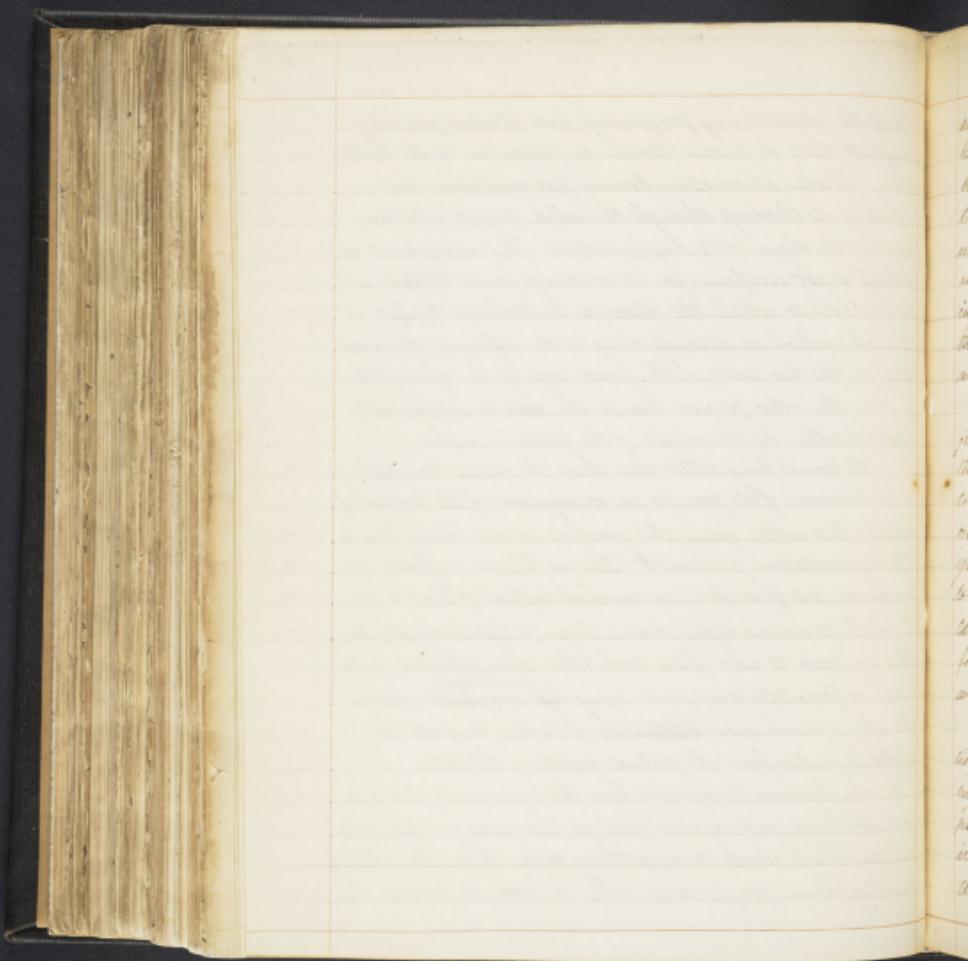
Opinions were formerly much divided with respect to the



state of the uterus during pregnancy, but it was generally imagined that it became thicker in proportion to its extension. Later observation however has ascertained that it maintains its thickness through the whole period, whatever may be the degree of its augmentation. This enlargement nevertheless is not uniform, for it is always found thicker at that portion to which the placenta is attached, & thinnest at the neck; which is obviously owing to the difference of capacity in the two parts, & the greater size of the cap of the one than the other, & not because the neck is mechanically stretched either by the weight of the fetus, or vessels.

The first bias settled then that the uterus loses nothing in the number of its parietes in consequence of its increase of volume, but rather gains, the question at our views here is this segmentation proband? This we believe is effected by two causes; and first from an increased influx of blood to it, by which its various vessels become larger, & less convoluted; its fibers are made to recede from each other, more cellular membrane is formed, & every part being less <sup>more rounded</sup> consolidated renders the uterus much more distensible, & liable to yield to slight impulsion from the gradual growth of the fetus.

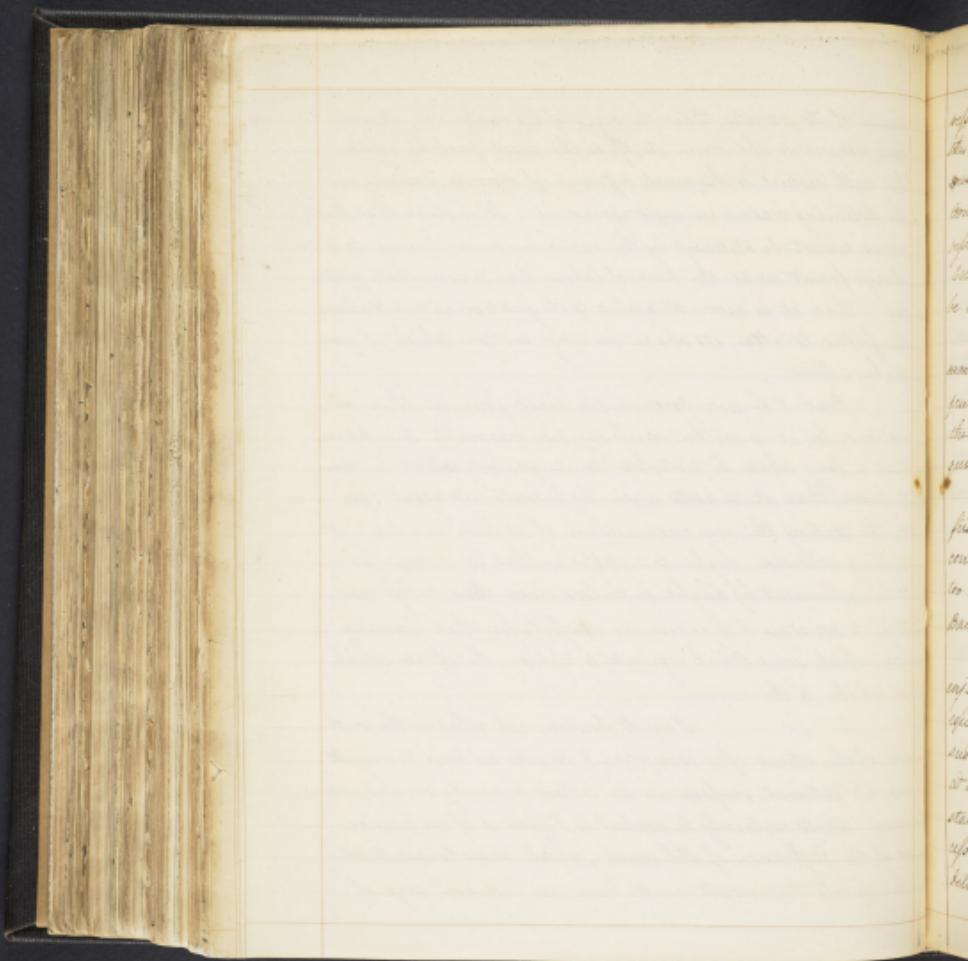
In order however to explain how this organ maintains a determined shape, and resists such an enormous increase of capacity, we must resort to something more than the above-mentioned cause, for it seems rather to account for the si-



smiles of its parities, than the size of its cavity. we therefore have recourse to the womb itself as the most probable agent; but with respect to this, much difference of opinion prevails, and the following reasons are urged against it. It is stated that the uterus cannot be distended by the increasing womb, because it is always found until the time of labour taut, & somewhat yielding; that it is never distended to its greatest extent, & allows the fetus to alter its shape in every motion which it may make. But

But I do not perceive the least force in these objections, for it is neither necessary, nor reasonable to suppose that a body shall be distended to its greatest extent in order to prove that it is acted upon by a material agent; for on the contrary the very circumstance of its being in a less, and yielding condition ought to satisfy us that it is more liable to be influenced by slight impulses, since there is less resistance to motion. & of course no necessity for that human frame which some think sufficient to produce the effects which we ascribe to the womb.

I would however ask what is the condition of the uterus after conception? Its sides are tense, & unyielding, its internal surfaces are in contact or nearly so, and some power would certainly be required to distend it if we believe in the influence of the womb, which seems to counteract the effects that would result from an increased size of



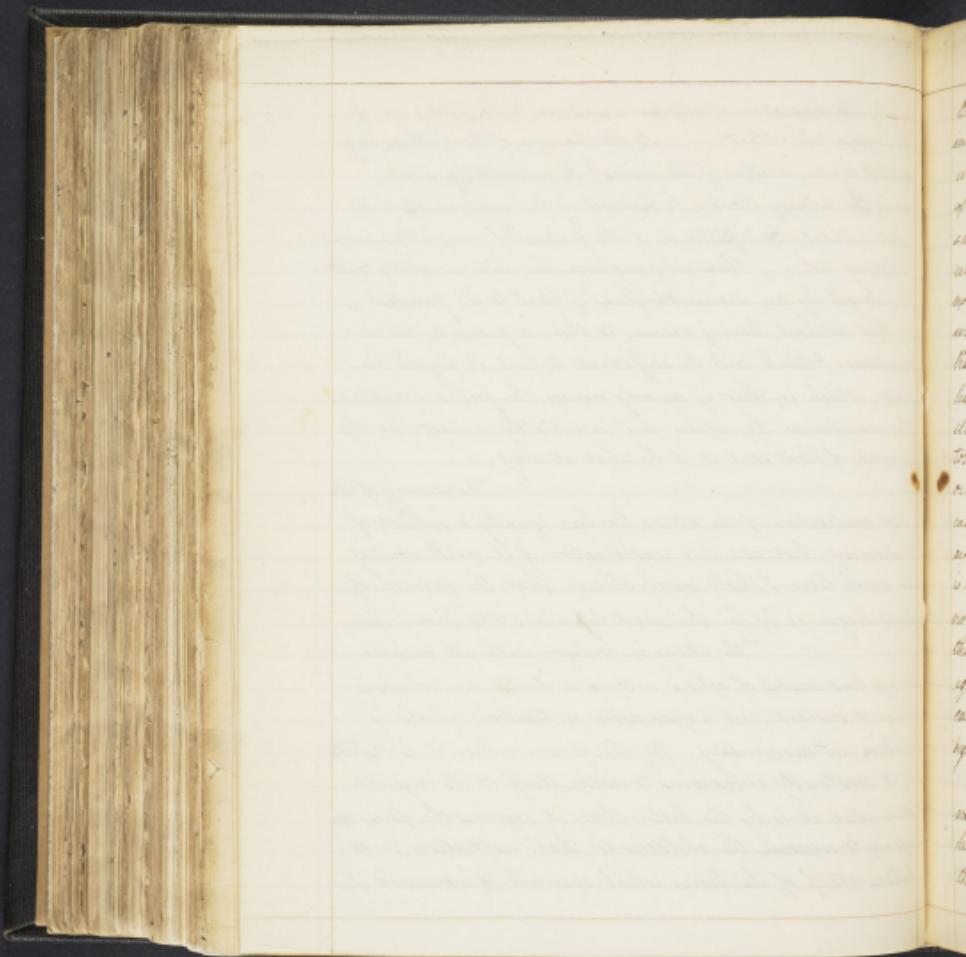
refuse, the formation of cellular membrane, & the filtering up of the venous blood. . . . & the diameter of the arteries augmented by an excretion of the puerus? & embolism, &c. &c.

Would the ordinary bladder be rendered by an excretion of the puerus without the appearance of the gradually inviolating urine? Certainly not. - Then why suppose the uterus capable not to be enlarged by an innocent influx of blood to its parietes? -

But without having recourse to these arguments, one circumstance I think will be sufficient to put it beyond dispute, which is, that if we only remove the fetus, or subdue the membranes the uterus will immediately contract, let the quantity of blood sent to it be what it may.

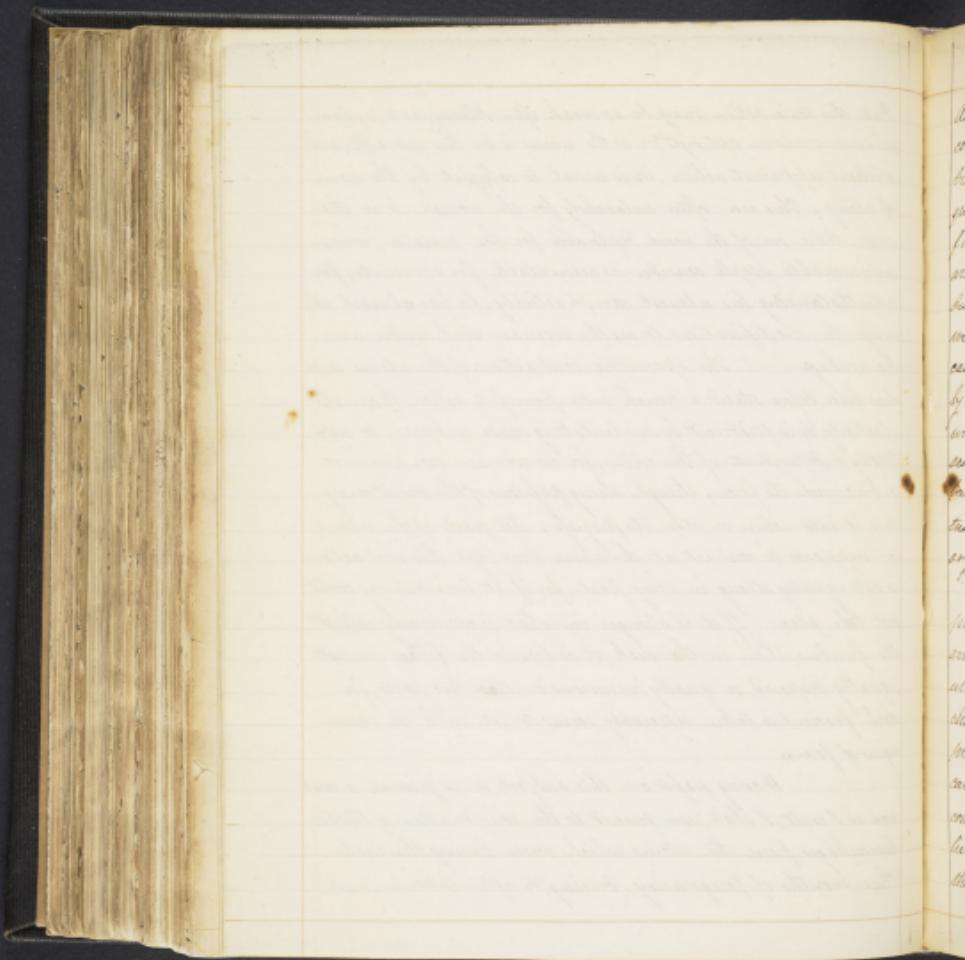
The cause of the first contraction of the uterus has been equally a subject of controversy, but as a full consideration of it would occupy too much time I shall merely observe that the opinion of David Locque is by far the most ingenious, & to him I refer.

"The uterus in common with all muscles enjoys two modes of action, a tonic or elastic one which is equal & constant, and a spasmodic contraction which is sudden, and momentary. By the former when it is distended it constantly endeavours to restore itself to its original state, but it is by the latter that it requires the force necessary to overcome the obstacles to that restoration, & to deliver itself of the bodies which encumber, & incommod it.



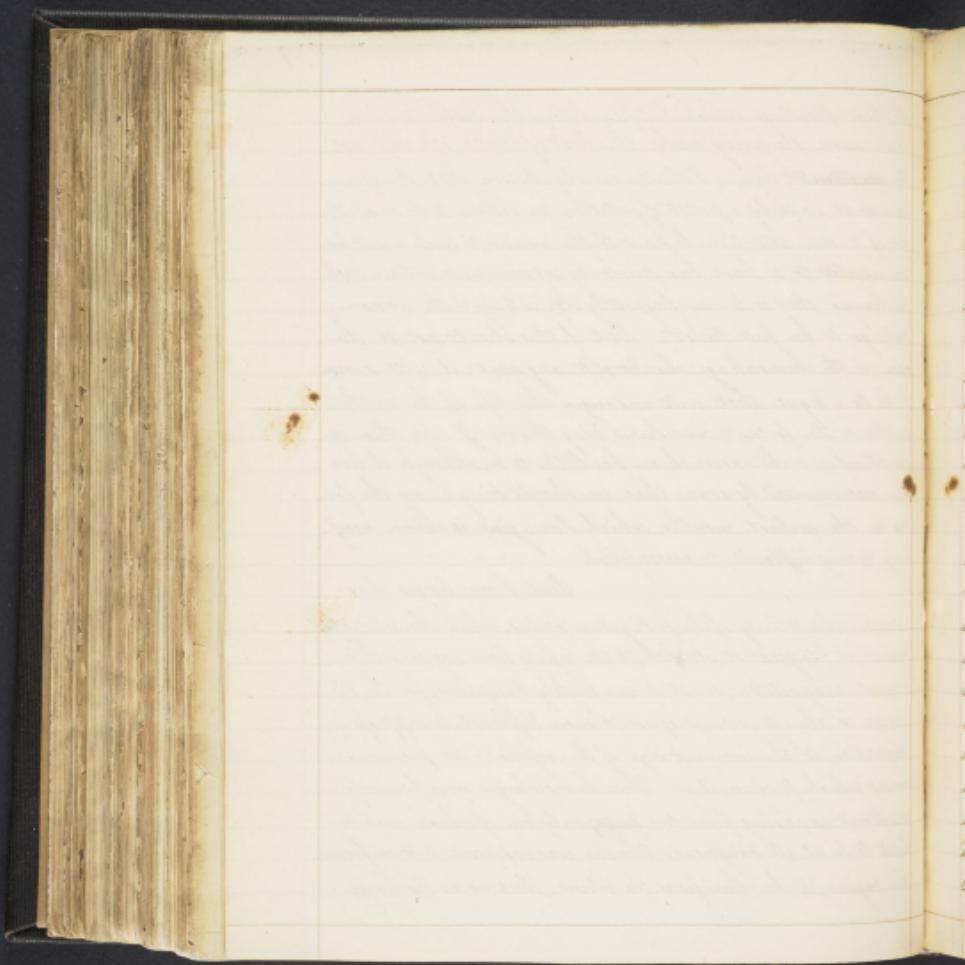
But this tonic action may be so weak after delivery as to appear in some measure obstiçy; for as the uterus is in this case soft, and without apparent action, it is usual to call it by the name of stony. This case, often melancholy for the woman, is at the same time one of the most deplorable for the operator, whom unmerciful people consider as accountable for all events; for notwithstanding his unusual care, & activity, he has almost always the mortifications to see the woman sink under an hemorrhage. The spasmotic contractions of the uterus, is, as has been before stated a much more powerful action than its elasticity, & is produced by an initiating cause unknown to us & totally independent of the will, for no woman can augment or diminish its force, though strong pessaries of the midwife may call it into action or stop its progress. All parts of the uterus are supposed to contract at the same time, yet this contraction is not equally strong in every part, for if it were delivery could not take place. If it is stronger in what is commonly called the fundus, than in the neck, it is because the fibres are not equally dispersed, or equally numerous in those two parts, for each pessary taken separately seems to act with the same degree of force.

Having passed over this subject in as general a manner as I could, I shall now proceed to the consideration of those hemorrhages from the uterus which occur during the last three months of pregnancy, during, & after labour.



As these florblings which happen before the sixth month come more frequently under the head of abortions, & will not be ~~considered~~ here; I shall merely observe that the consequences at so early a period of gestation are seldom to be dreaded; for if proper attention be paid to the woman, & such remedies are resorted to as have been proved by experience to sustain such discharge, they will very frequently stop entirely, & the woman will go to her full period. But if this should not be the case, & the hemorrhage should still augment, it will scarcely be to argue that will endanger the life of the mother without the foetus & membranes being thrown off. In these cases therefore the accouchement has little to do, although it has been recommended by some that we should bring away the foetus in the earliest months, which I imagine is often very noisy & difficult to accomplish.

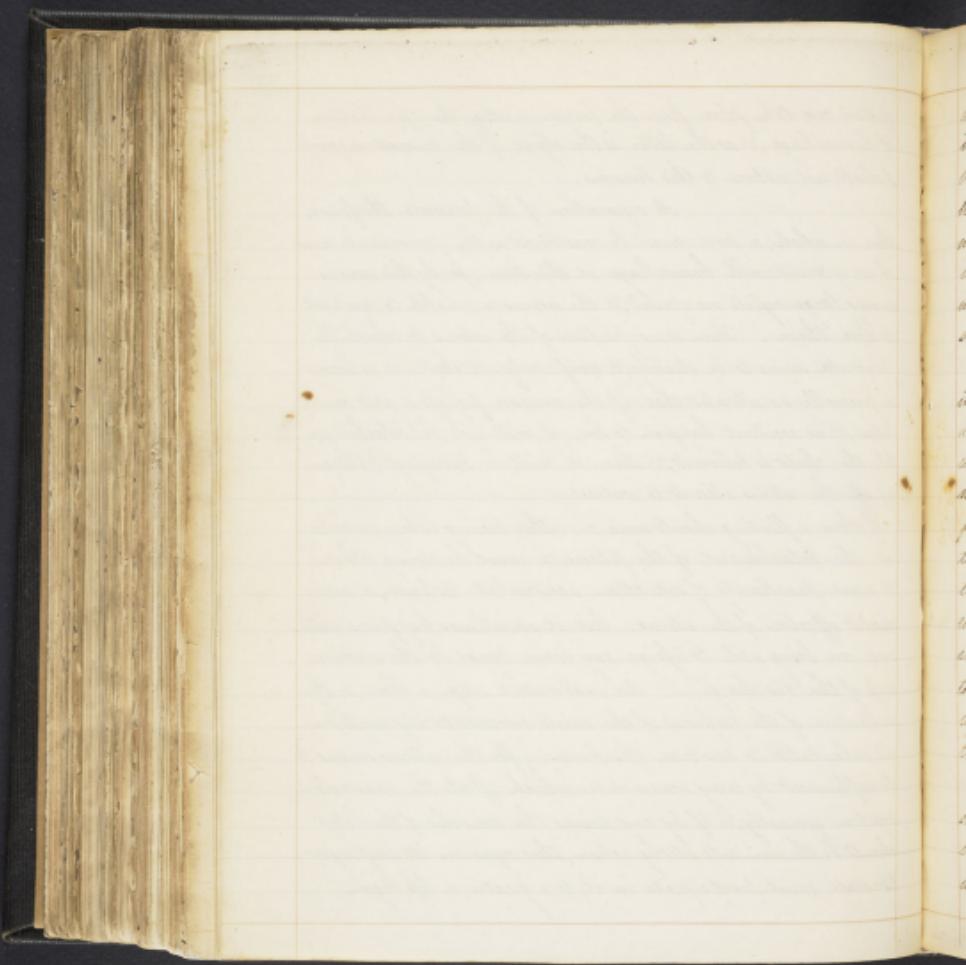
But hemorrhages that precede the delivery of the full grown foetus, when the uterus is swelled at its greatest strength, & the vessels have acquired their almost magnitude, must be very highly dangerous, for the discharge is always more profuse, & more difficult to support in proportion to the increased size of the vessels, & the peculiar causes which produce it. These hemorrhages were formerly considered as arising from two parts only one of which was believed to be at all dangerous. The one was supposed to come from the vagina, & the other from the uterus. But as no discharge



of blood can take place from the former with the appellation  
of hemorrhage, & as the latter is the object of the present inquiry  
I shall not refer to this Division.

The separation of the placenta therefore in-  
her in whole, or part must be considered as the proximate cause  
of every considerable hemorrhage at this time, for by this means  
many large vessels are broken, & the uterus is unable to contract  
to close them. There is no portion of the uterus to which the  
placenta seems to be stable, & uniformly attached. It is however  
a question so intricate that if the woman suffers a good contri-  
bution, & no accident happen to her, it will not be detached un-  
til the child is delivered, & then it will be disengaged, thrown  
off, and the uterus allowed to contract.

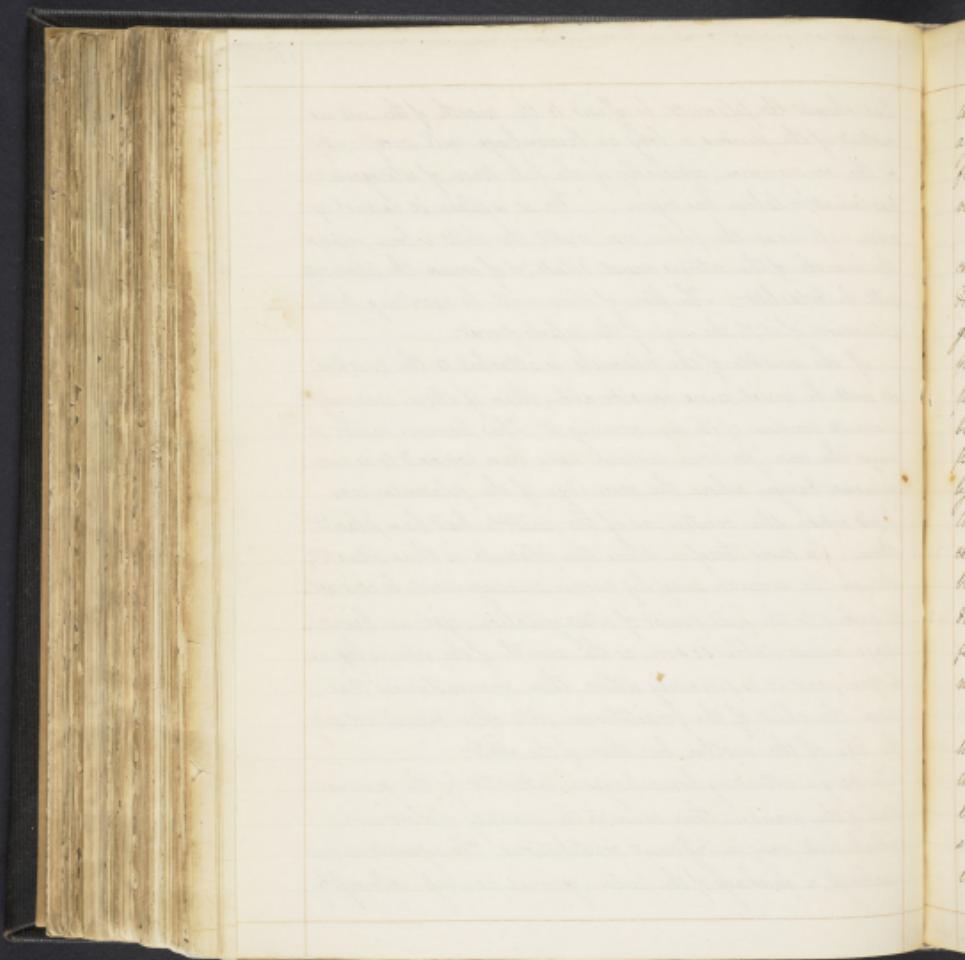
If then a floating sheet come on either during labour, or before  
it, the detachment of the placenta must be owing either  
to some peculiarity of situation, accidental violence, or some  
want of action of the uterus. But it sometimes happens with-  
out one being able to assign any cause equal to the subduc-  
tion of the placenta. An inadvertent step, a blow, or the  
influence of the passions of the mind momentarily excited are  
all calculated to produce the disease; for the uterus seems to  
be influenced by every occurrence which affects the muscular  
system generally. & if by any means the muscles of the body  
should be thrown into strong action, this organ in its impregna-  
ted state must participate in it, to a greater or less degree. —



But should the placenta be attached to the mouth of the uterus instead of the fundus, or by an lamourage will necessarily be the consequence, especially if the full term of intermission has arrived, & labour has begun. For it is plain it cannot be more safe as in the former case until the child is born, because the mouth of the uterus must dilate, & of course the placenta will be detached. The flow of blood will be according to the situation of it, & the size of the vessels opened.

If the middle of the placenta is attached to the ~~or~~ uterus it will be much more considerable, than if there was only a small portion of its size covering it. This however will always be the case, for some women have been exposed to as imminent danger where the mere edge of the placenta was placed upon the osuteri, as if the middle had been placed there. In cases therefore where the placenta is thus situated, though the woman may by proper management be conducted safely to the full term of intermission, yet an hemorrhage is inevitable so soon as the mouth of the uterus begins to open; and it is precisely under these circumstances that even the child of the forementioned will often discern not only the life of the mother, but that of the child.

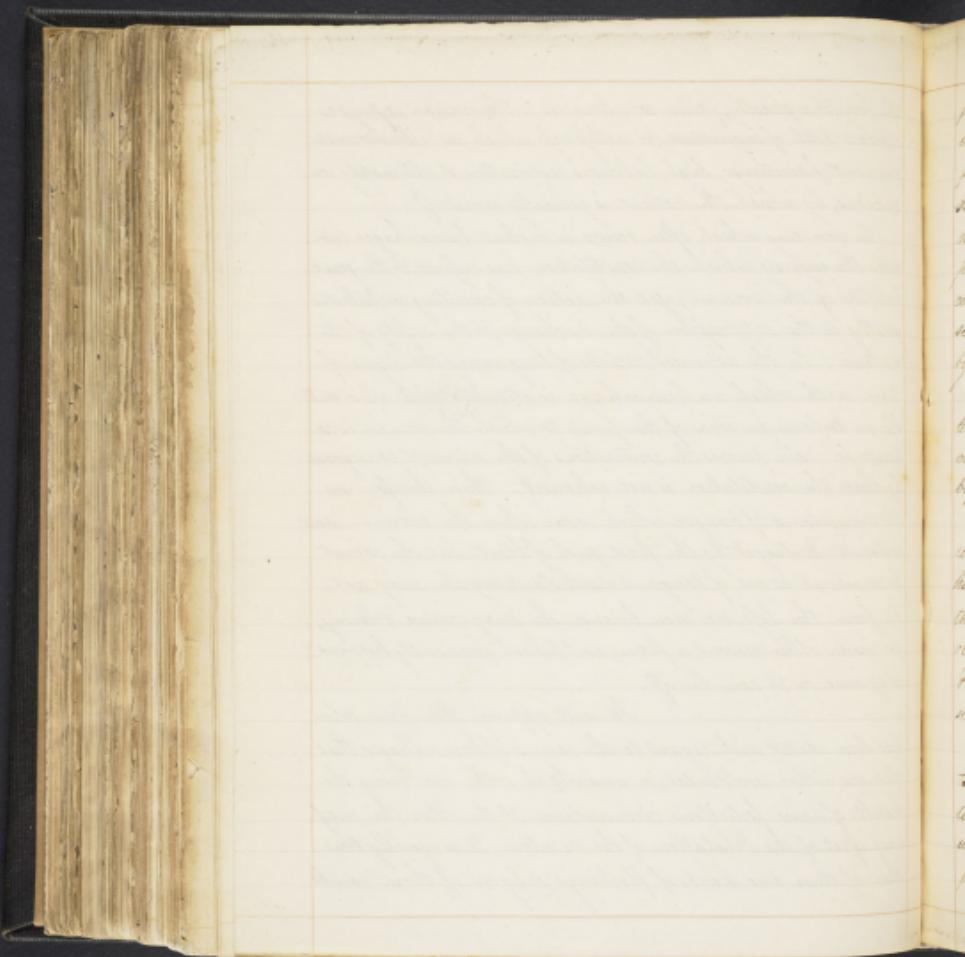
The degree attending haemorrhage is indicated by the general state of the woman, their cause, & the quantity of blood lost, which will vary in different constitutions. The symptoms are weakness, or shaking of the pulse, general paleness, coldness of



In this, & a plumper, fallen countenance. The woman expresses a great deal of impatience, & restlessness which are attended with frequent faintings, high, laboured respiration, & ultimately convulsions, by which the patient is generally carried off.

The vomiting which often occurs in violent labour hæmorrhage indicates the injury which the constitution has suffered. & the great debility of the woman; yet the action of vomiting contributes greatly to the suppuration of the discharge, & the salutary effects of the patient. In the advanced periods of pregnancy the degree of pain with which an hæmorrhage is attended will also enable us to form an idea of the peril to which the woman is exposed, for pain provokes the contractions of the uterus, & consequently that the constitution is not coherent. Then therefore we see symptoms of danger which occur when the womb is not completely destroyed by the first gush of blood; but she cannot be considered as out of danger notwithstanding she may not die from the loss, nor even because she may survive delivery, for besides other reasons, a fever, as I believe frequently happens, may come on, & carry her off.

It will appear then from what has been stated with regard to the causes of hæmorrhage, that they are either accidental, or unavoidable; the one being the result of some fatiduous circumstance, & the other the necessary effect of the dilatation of the os uteri. It is equally true that of these two kinds of flooding only one of them can be

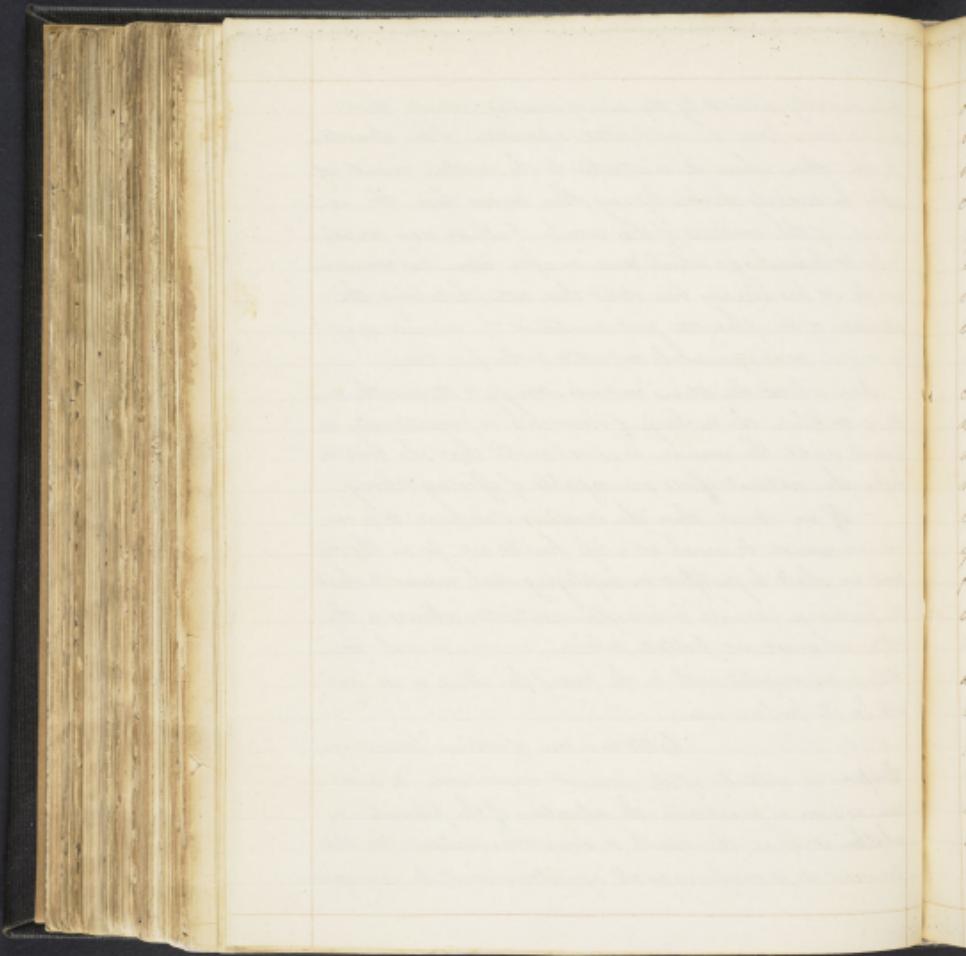


permanently relieved by the use of emetics, usually, that which arises from the unevacuated separation of the placenta; for the other where it is attached to the os uteri cannot possibly be entirely checked by any other means than the removal of the contents of the womb. I allude now principally to hemorrhage which comes on after labor has commenced, for it has already been stated that notwithstanding the situation of the placenta just mentioned the woman may by proper management be conducted to the full time.

But whilst the uterus contracts strongly, & its mouth remains to dilate the discharge of blood will be proportionably increased, until the woman is so exhausted that she will die before the natural efforts are capable of effecting delivery.

If we admit then the preceding statement to be correct we cannot be much at a loss how to act, for on the one hand we shall be justified in employing such means to check the discharge, as will be hereafter mentioned, whereas on the other we must not hesitate to labor, so soon as such conditions are complied with on the part of the uterus as are appropriate for its performance.

Relative to a case of uterine hemorrhage therefore it will be of the utmost importance to ascertain as soon as practicable the situation of the placenta, or whether it be at the mouth, or some other position. For this purpose it is necessary as all symptoms must be very equiv-

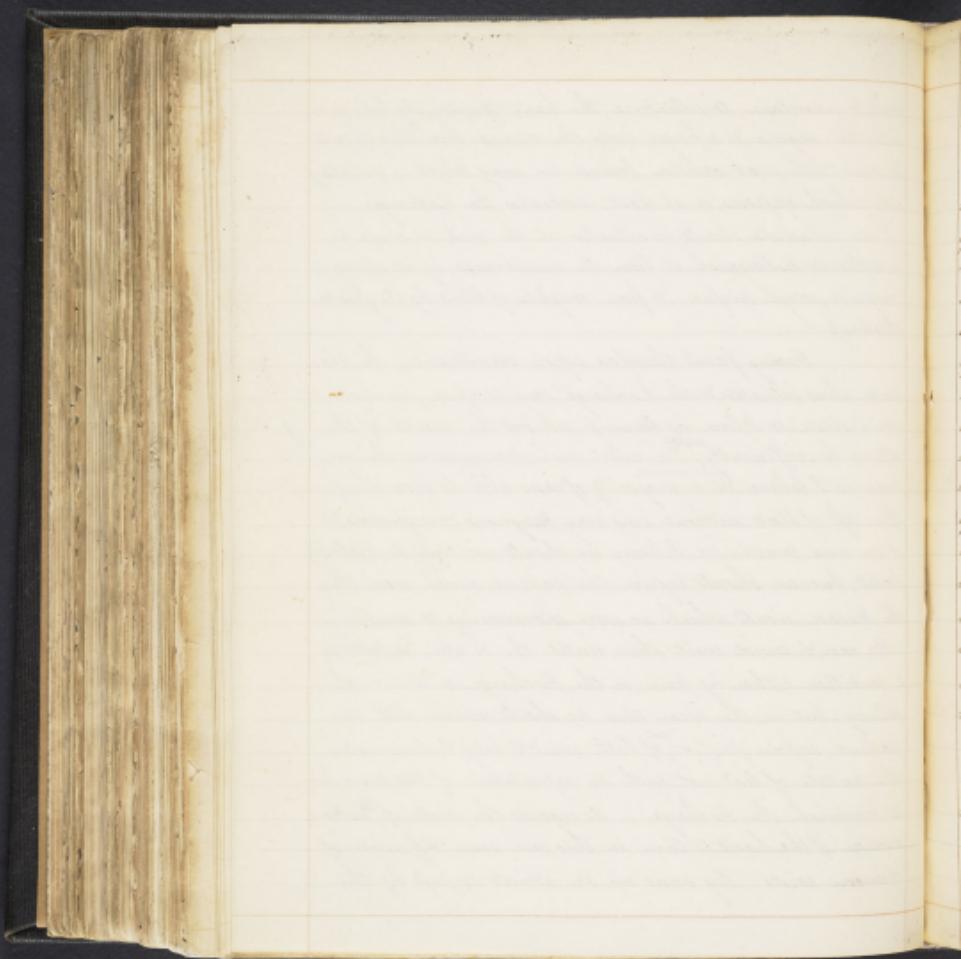


real, & uncertain, to introduce the hand previously lubricated into the vagina, & a finger into the uterus: but this should be done with great caution, because we may detach a salutary clot which opposes, or at least morasses the discharge.

If the placenta should extrude at the neck we shall be unable to distinguish it from the membranes, by its strong, irregular, rough surface, & from serpents of blood by its pliant stickiness.

Bacon found therefore upon examination the placenta thus detached, & the discharge very profuse, we shall not hesitate to deliver by means judicid the zenith of the uterus & sufficiently. For under such circumstances the woman is I believe to a majority of cases able to bear the further loss of blood without any very dangerous consequences, & if we were to attempt delivery by hands not only be probably failed, but we should injure the patient much more than the disease would which we were endeavouring to remove.

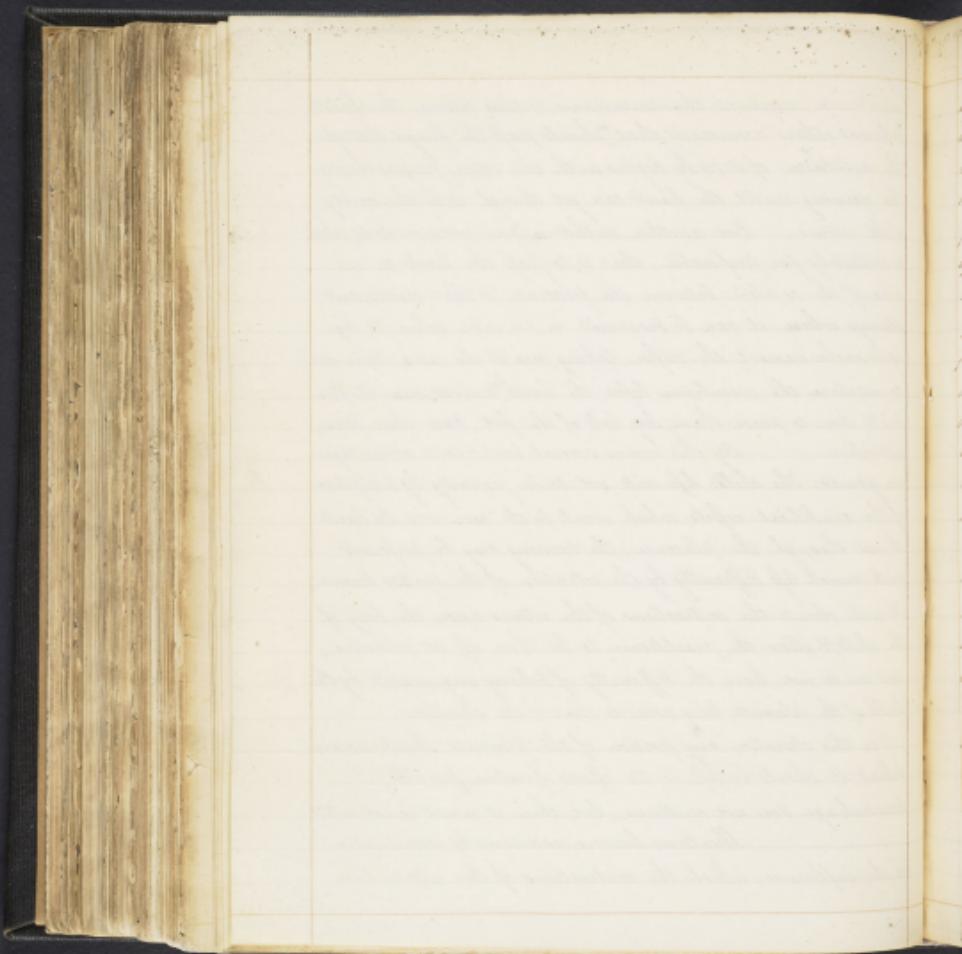
We can, & must wait then until the os uteri is full in a condition either by pain, or the discharge a point of serosity: but in the mean time we should remain with our patient, in full perfect of both mind & body, & administer the acetate of lead, not with an expectation of stopping, but to diminish the discharge. As regards the mode of extraction of the hand to turn in this case some difference of opinion exists. By some we are advised to pass by the



platenta, suture the membranes, & thus deliver the child; whereas others recommend that "Should pass the finger through the substance of it, & by degrees with the other fingers draw the opening until the hand can get through into the cavity of the uterus. But another method is now recommended, which is certainly far preferable, that is, to pass the hand on one side of the <sup>the</sup> uterus between the placenta & that viscous, and always where it can be discovered on the sides where the finger approaches nearest the surface, taking care at the same time not to suture the membranes before the hand arrives near its fetus, & then to pierce them, lay lots of the fat, draw them down, and deliver. By this means several important advantages are gained. The child is left to its company by a rupture of the umbilical vessels, which would be the case, were the hand thrust through the placenta; the turning may be performed with much less difficulty by the anterior of the waters, because it will obviate the contractions of the uterus upon the body of the child, & allow the midwives to be then off at pleasure; and we do not have the difficulty of delivery augmented by the bulk of the placenta being added to that of the infant.

In this operation any portion of the placenta should remain behind, it should be left to the efforts of nature provided the hemorrhage does not continue, but then it must be extracted.

Should we however ascertain by examination, or the influence which the contractions of the uterus have

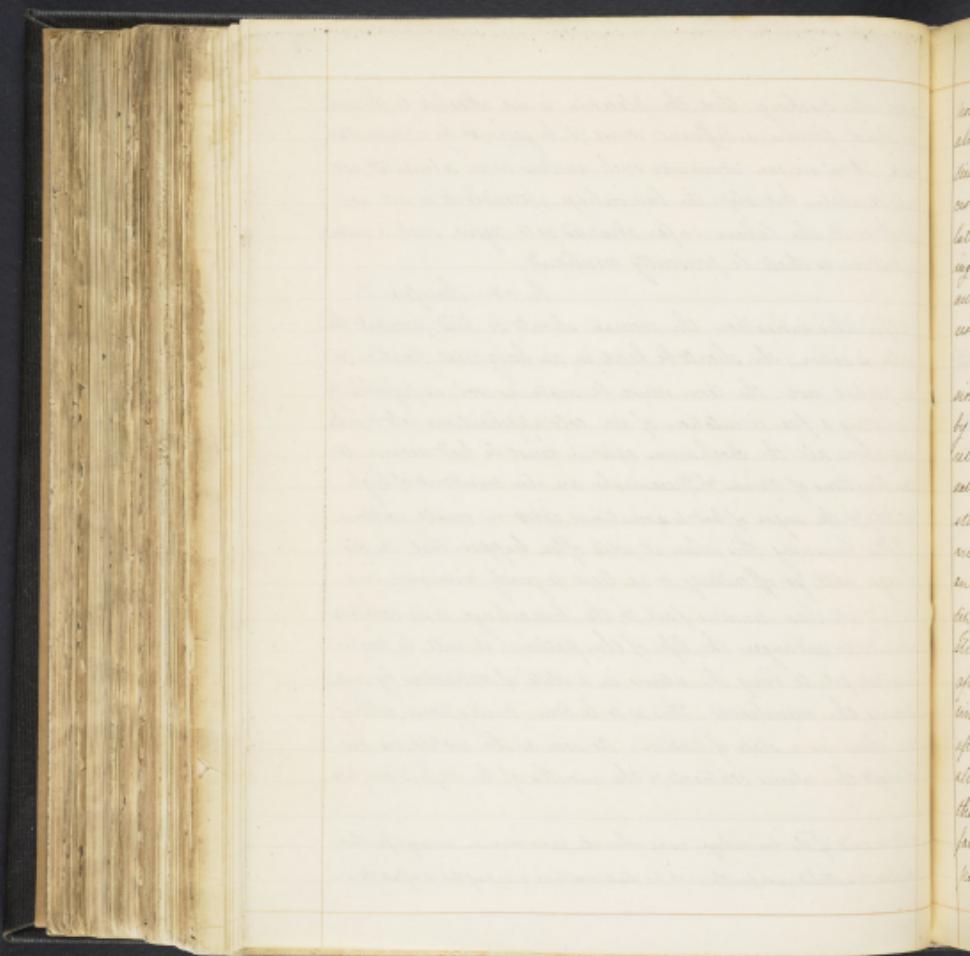


upon the discharge that the placenta is not attached to the neck we must pursue a different course, & be governed by circumstances &c. Here we can administer such remedies as are calculated, not only to abate, but stop the hemorrhage; provided it is not so profuse, & the labour so far advanced as to require such a mode of conduct as shall be presently mentioned.

In order therefore to fulfil this indication the woman should be bled, provided the pulse is active. She should be kept in an horizontal position, & as perfect rest. the room must be made as cool as possible by admitting a free circulation of air, cold applications, cold baths &c above all the *decharatum sanguini* must be hot & warm to. Combinations of *Mann* & *Placenta* are also considered of high utility, & the sugar of lead is sometimes added in small portions.

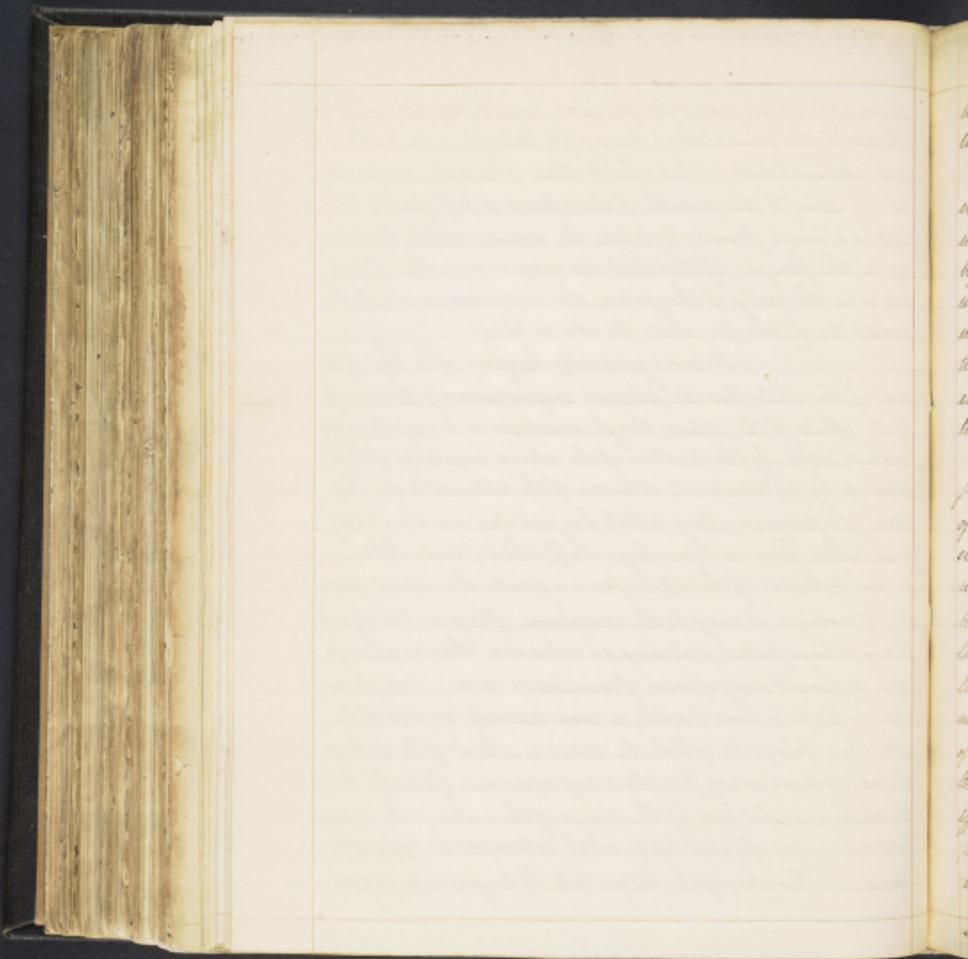
After pursuing this plan it will often happen that the discharge will go off entirely, or at least is greatly moderated, but should all these measures fail, & the hemorrhage is so considerable as to endanger the life of the patient, it will be proper to attempt to bring the uterus in a state of contraction by exciting the membranes. This is to be done during pain, setting the womb in a state of tension. As soon as the waters are discharged the uterus contracts, & the smooths of the vessels are pre-

\*It is said of the hemorrhage comes when the pains come on in majority that the placenta is steadily attached to the womb the shorter duration is in proportion to its force there.



involuntary closed; pains for the most part sumptuous are always, & the presentation being foot delivery is in a short time accomplished. But should those fortunate circumstances not occur, & the mouth of the uterus is sufficiently dilated, we must proceed to deliver the woman either by turning, or the forceps. If the head has escaped from the uterus and is in the cavity of the pelvis, the latter means must be resorted to, if not we shall be able to turn.

It most generally happens after the separation of the child that the placenta is spontaneously thrown off by the efforts of the uterus, though sometimes it is unfortunately retained, either by the insertion of the uterus, irregularity of that action, or by heterotiarial adhesions of the placenta to it. This state of syncope, or stupor which has just been mentioned may arise either from an hemorrhage itself which precedes labour, or over distention of the uterus from a greater than usual quantity of water, & it may be the consequence of long continued, and strong labour pains, producing an exhaustion that is always apt to succeed every species of immediate action. But at no time is it to be supposed, or more certainly expected than after those labours in which the uterus is relieved of its contents almost instantaneously, & without any apparent effort; for here the child is washed out by the current of the waters, & the uterus falls into a sort of insensibility which interrupts its contractile power. This state of the uterus will be dangerous in practice -

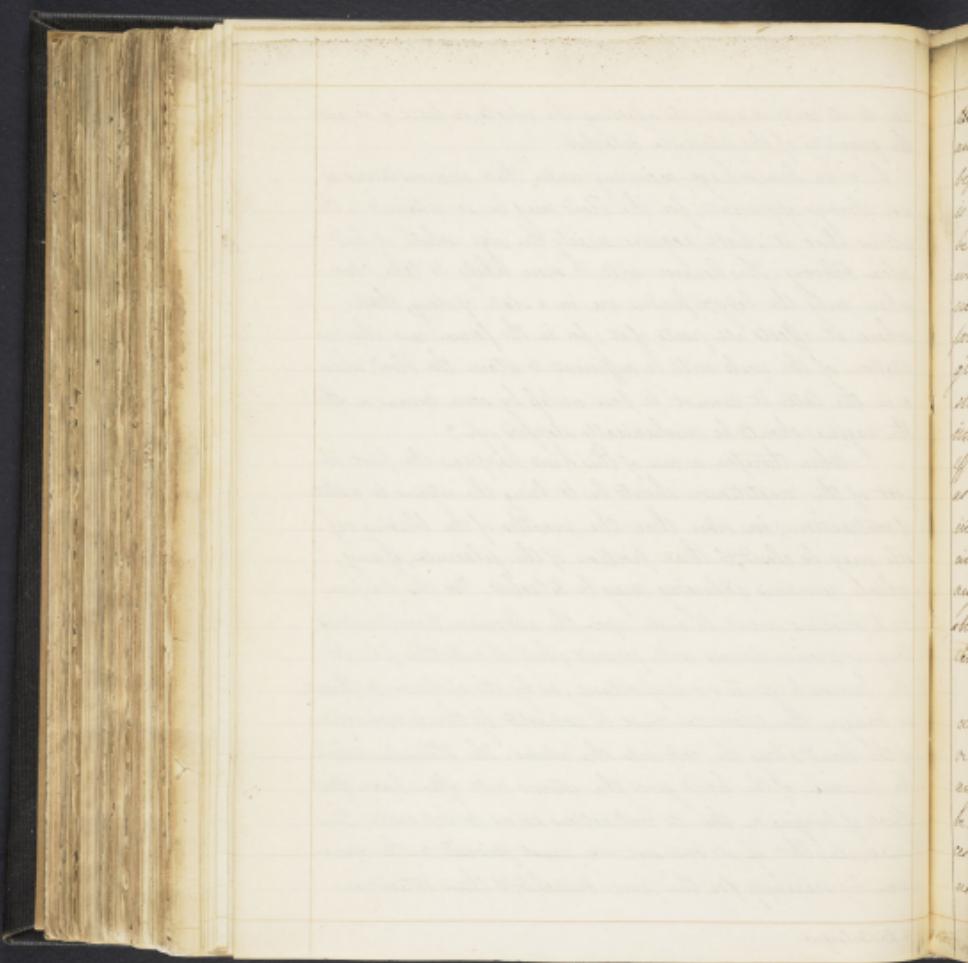


tion to its continuance, its affecting the whole, or part of it, and the quantity of the placenta detached.

But haemorrhage recurring under these circumstances is not always apparent, for the blood may be so retained in the uterus that it shall require nearly the size which it had before delivery. This however will be more likely to take place where out of the body, & fluids are in a state of stony, than where it affects all parts of it; for in the former case the contraction of the womb will be sufficient to retain the blood; whereas in the latter it cannot be done unless by some means, or else the vagina should be mechanically stopped up.\*

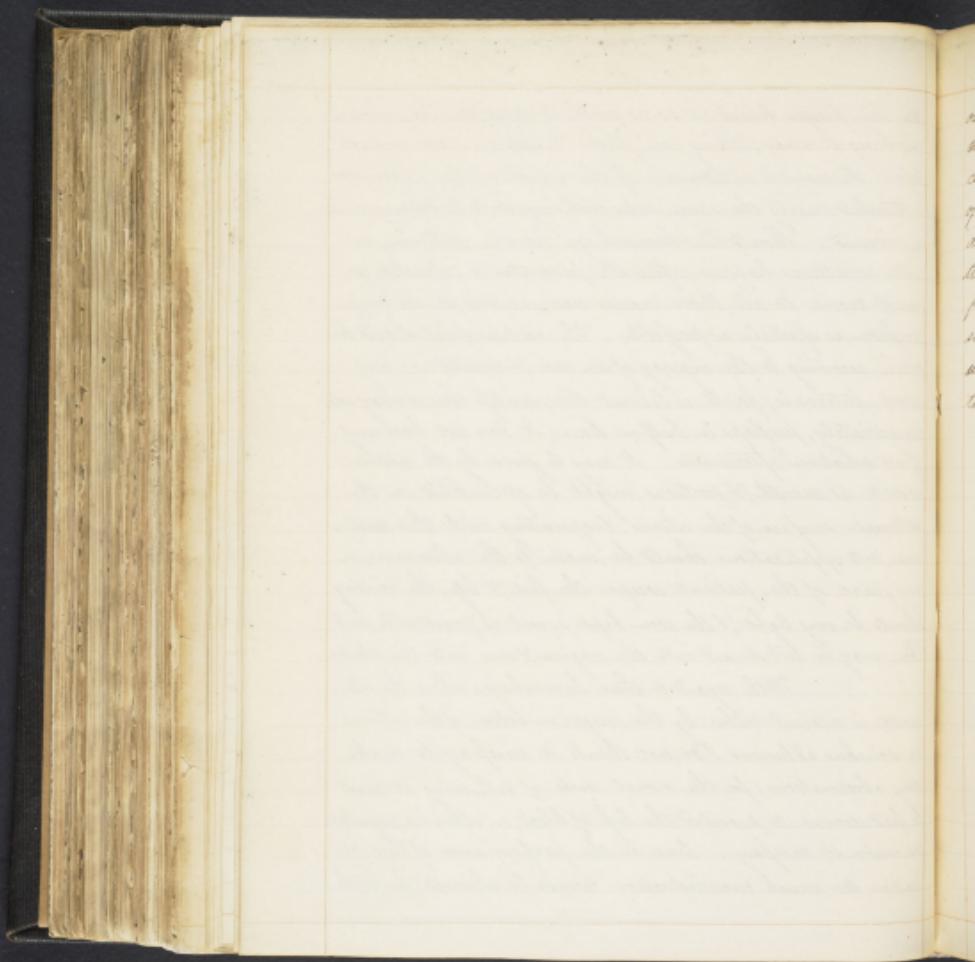
When therefore a case of this kind happens the first object of the practitioner should be to bring the uterus to a state of contraction; in order that the vessels of the bleeding vessels may be closed, & that portion of the placenta, if any, which remains adhering may be detached. For this purpose such fictions must be made upon the abdomen, & continued as long as circumstances will permit; but should this fail, & the haemorrhage is so impetuous, as by its violence to throw a tumor, the placenta must be detached by the introduction of the hand along the cord into the uterus. The stimulus which the presence of the hand gives the uterus will often have the effect of bringing on the its contractions so as to separate the placenta; but if it does not we must proceed to the operation by searching for the part detached, & then introduce

\* Endologus.



So the fingers behind it so as gently to separate the whole, and bring it away, taking care that the uterus shall contract before the hand is withdrawn. If the whole of the placenta is detached nearly the same rules with regard to its delivery must be observed. Should the hemorrhage however continue, as will sometimes happen, after the placenta is extracted, we must resort to all those means recommended for its suppression as speedily as possible. The extract of Led should be given according to the urgency of the case, & repeated at very short intervals, for it is believed that unless this remedy acts immediately, perhaps in half an hour, it does not have any effect whatever afterwards. It may be given by the rectum as well as mouth & portions might be applied directly on the internal surface of the uterus. Cooperating with this medicine, cold applications should be made to the abdomen, or any part of the patient except the feet, & legs, the covering should be very light, & the room kept as cool as practicable, and ice may be introduced into the vagina & even into the uterus.

With regard to those hemorrhages where the placenta is retained either by the irregular action of the uterus, or circumstances I do not think it necessary to make any observations; for the usual mode of delivering it must be had recourse to, provided the loss of blood, or other circumstances render it necessary. But in the performance of this operation too much circumspection cannot be observed, for with-



me it we are not only liable to fail in the attempt, but we may do a great deal of mischief, either by a rupture of the cord, a lesion of the uterus, or we may produce an inversion of it.

It is also of the utmost importance after a hemorrhage, particularly a profuse one, that the patient shall not be disturbed, or raised to an erect posture, for from a neglect of this precaution sudden death has sometimes happened even when it was least expected and we know by a recumbent posture life may be often saved when an erect one would be inevitable death.

Paris



